

## **RE-CONFIGURABLE SOLE FOR FOOTWEAR**

## **BACKGROUND**

### **1. Field of the invention**

The present invention is directed to a footwear product which in various forms is operative through the use of an interchangeable plug, which includes an emblem portion, to selectively display a plurality of designs or messages through the process of articulation of the sole portion of the footwear product.

### **2. Description of the Prior Art**

Since the beginning of mankind, individuals have used protective footwear to guard against the elements and the environment. Such footwear has taken various forms including sandals, boots, shoes, and athletic or performance wear. While in its origins footwear products were primarily functional or protective in design, footwear today incorporates functional, protective, as well as fashion elements.

Particularly in the field of athletic or performance wear, it has come to be the case that suppliers of such goods have employed a wide variety of integral designs upon the portion of the sole of such goods which comes into contact with a given surface. It has often been the goal of such producers of athletic footwear to taut the functional advantages of the designs, for example that such designs improve the ability of an individual to perform on a wide and varied topography. The primary function of such

designs integral with the sole has been the ability to market or promote the footwear as yielding improved operational capabilities.

It is also known that various stamps or methods of embossing have been used to mark surfaces with materials such as ink, waxes or dyes. In a common form there is a rubberized surface attached to a "T-shaped" hand held implement, wherein a user engages the rubberized surface with a receptacle containing an ink, which after applying sufficient force causes the ink to be deposited upon the raised portion of the rubberized surface. After sufficient ink has been deposited upon the raised portion(s) of the rubberized surface the user then removes the rubberized surface from contact with the ink receptacle and thereafter engages the rubberized surface with the surface which is to be marked.

However, to date neither those involved in producing fashion footwear, nor those involved in producing athletic or performance footwear have been able to achieve the advantage of incorporating selectively interchangeable marking capabilities into the designs of the soles of their footwear.

Therefore, an object of the present invention is to produce a footwear product adapted to mark surfaces with which it comes into contact by the use of an interchangeable plug having an emblem portion which is operative to mark surfaces.

It is a further object of the present invention to produce a footwear product which includes a locking mechanism operative to maintain the plug within a recessed section of the sole.

It is a further object of the present invention to produce a footwear product which includes an emblem portion of the plug which has a profile which deviates from a plane formed by the lower surface of the sole of the footwear product and the perimeter surface of an interchangeable plug received into a section of the sole, the emblem portion being operative to mark surfaces with which it comes into contact.

These and other objects of the present invention will become apparent to one of ordinary skill of the art upon reviewing the enclosed drawings and reading the description of the preferred embodiment.

## **SUMMARY OF THE INVENTION**

The objects of the present invention are met by the footwear product described in detail herein. Disclosed in the preferred embodiment is a footwear product adapted to selectively mark surfaces with which it comes into contact. The footwear product includes a sole having recessed section. The footwear product further includes an upper portion attached to at least some section of the sole, the upper portion adapted to conform to at least some portion of the anatomy of the foot of an individual wearer, the upper portion operative to maintain the wearers' foot in proximity to the sole. The footwear product further includes an interchangeable plug adapted to selectively fit within the recessed section of the sole. A locking mechanism is operative to maintain the plug within the recessed section of the sole. An emblem portion of the plug has a profile which deviates from a plane formed by the lower surface of the sole and the perimeter surface of the plug, the emblem portion is operative to mark surfaces with which it comes into contact.

## **DESCRIPTION OF THE DRAWINGS**

Figure 1 discloses an embodiment of the present invention adapted for use in a sandal footwear product from a bottom - angled perspective.

Figure 2 discloses an embodiment of the present invention adapted for use in a sandal footwear product from a top perspective.

Figure 3 discloses an embodiment of the present invention adapted for use in a sandal footwear product from a bottom perspective.

Figure 4 discloses an embodiment of the present invention adapted for use in a sandal footwear product from a side cross section perspective.

Figure 5 discloses an embodiment of the present invention adapted for use in a sandal footwear product from a front cross section perspective.

Figure 6 discloses an embodiment of the present invention adapted for use is a water-shoe footwear product from a bottom – angled perspective.

Figure 7 discloses an embodiment of the present invention adapted for use is a water-shoe footwear product from a top perspective.

Figure 8 discloses an embodiment of the present invention adapted for use is a water-shoe footwear product from a bottom perspective.

Figure 9 discloses an embodiment of the present invention adapted for use is a water-shoe footwear product from a side cross section perspective.

Figure 10 discloses an embodiment of the present invention adapted for use is a water-shoe footwear product from a front cross section perspective.

## **DESCRIPTION OF THE PREFERRED EMBODIMENT**

The advantages achieved by the present invention are illustrated in the embodiment shown in Figures 1 through 5. Briefly, the sandal, designated with the numeral 10, includes a sole 12. The sole 12 may be manufactured from a wide variety of materials. For example, the sole 12 may be a rubberized material, stiffened foam, a laminated material, a composite material or a commonly used material such as leather. Attached to the sole 12 is an upper portion 14 which depending upon the performance goals of the manufacturer, may embody a wide variety of configurations and materials, to numerous to delineate in explicit detail in the present specification. As more clearly shown in Figure 2, the upper portion 14 is disclosed as a common sandal having a band 15 which fits about an upper anterior portion of the wearers foot. It should be appreciated that notwithstanding the precise configuration of the upper portion 14, it is the function of the upper portion 14 to maintain the foot of the wearer in proximity to the sole 12 of the sandal 10.

Disposed along the lower surface of the sole 12 is a recessed section 16 which in the preferred embodiment is illustrated in the ball section 13 of the sole 12. However, it must be appreciated that while the preferred embodiment illustrates the recessed section 16 in the aforementioned location, the recessed section 16 may be positioned at variety of locations along the lower surface of the sole 12. For example, depending upon the application, the recessed section 16 may be located in the heel portion 17 of the sole 12,

as opposed to the ball section 13 of the sole 12, as illustrated. It should also be appreciated that the recessed section 16 may extend completely through the sole 12. The recessed section 16 may possess a wide variety of shapes, such as a circle, an oval, a square, a rectangle, a triangle, or other geometric shapes of various sizes.

An interchangeable plug 18 is dimensioned to fit within the recessed section 16 of the sole 12. Again, the interchangeable plug 18 may be constructed of a wide variety of materials. The interchangeable plug 18 may be a rubberized material, stiffened foam, a laminated material, a composite material, or a commonly used material such as leather. It should also be appreciated that for comfort or operational considerations the plug 18 may be formed in such a manner so as to receive a material having different viscosity or compressible characteristic from that of the body of the plug 18.

As described in the preceding paragraph, the plug 18 is dimensioned to fit within the recessed section 16 of the sole 12. Commonly, the plug 18 has a geometry which substantially conforms to the geometry of the recessed section 16. As shown in Figure 1 and 5, in the preferred embodiment the plug 18 has an outwardly extending ridge 20 which may extend along a section on the entire periphery 19 of the plug 18. The periphery 19 of the plug 18 may have a wide variety of profiles, in its most common form the plug periphery 19 is a substantially vertical wall 22 from which the ridge 20 outwardly extends. However, for mechanical considerations, the periphery 19 of the plug 18 may have a shallow conical form, which is operative to assist in maintaining the plug 18 within the recessed section 16. As shown in Figure 4, the recessed section 16 includes



a wall portion 24 which is across from the wall 22 of the plug 18. As shown in Figure 5, formed within the wall portion 24 is a channel 26 which is dimensioned to receive the ridge 20, which extends outwardly from the wall 22 of the plug 18. In the preferred embodiment the channel 26 is formed along a segment of the length of the wall portion 24. However, it should be appreciated that in various embodiments of the present invention the ridge 20 and the channel 26 may have various configurations. It is the purpose of the ridge 20 and the channel 26, notwithstanding the varied configurations they may possess, that these elements mate in a fixed relationship to maintain the plug 18 within the sole 12. It should also be appreciated that other docking configurations may be employed to maintain the plug 18 in the sole 12.

In the preferred embodiment there is strap 28 attached to the plug 18. It should be appreciated that the strap 28 may also be constructed from a wide variety of materials, and manufactured using a wide variety of processes. In the preferred embodiment, the strap 28 is made from a synthetic webbing material which exhibits considerable strength and durability. It may also be the case that the strap 28 is formed integrally with the plug 18, such as by an injection molding process. Located in an opposing relationship to one another, there are two openings 30 in the sole 12. The openings 30 are located in proximity to the location of the recessed section 16. It is the purpose of the openings 30 to receive opposing portions 32, 34 of the strap 28.

When assembling the plug 18 into recessed section 16, the opposing portions 32, 34 of the strap 28 are threaded through the opposing openings 30 in the sole 12. As shown

in Figure 5, once the opposing portions 32, 34 are threaded through the openings 30 they are drawn in a direction away from the sole 12 so as to locate the plug 18 fully into the recessed section 16. Manual pressure may also be applied to locate the plug 18 into the recessed section 16. It should be appreciated that because of the existence of the mating ridge 20 and channel 26 that sufficient force must be applied upon the opposing portions 32, 34 of the strap 28 to fully engage the plug 18 into the sole 12.

The strap 28 may include various retaining mechanisms operative to maintain the opposing portions 32, 34 in a fixed relationship. In the preferred embodiment of Figures 2 through 4 a Velcro attachment 36 of common form is employed. The Velcro attachment 36 may in and of itself be formed in a variety of configurations to enhance the aesthetics of the sandal 10. Importantly, it is the purpose of the Velcro attachment 36 to maintain the opposing portions 32, 34 of the strap 28 into an engaged relationship with the upper portion 14 of the sandal 10. While the preferred embodiment illustrates the use of a Velcro attachment 36, it must be appreciated that various other mechanisms may be employed to maintain the opposing portions 32, 34 in a fixed relationship to each other. For example, a common mechanism for accomplishing this goal is the use of a buckle (not shown). Depending upon the mechanical stresses applied to the footwear product, the retaining mechanism will have to be designed to accommodate such variations.

A second embodiment of the present invention is shown in Figures 6 through 10. In this embodiment the present invention is applied to a water shoe 100. It should be appreciated by one of ordinary skill of the art that the application of the present invention

to a water shoe 100 is accommodated in a substantially similar manner to the manner applied in sandal 10 of Figures 1 through 5.

While the preferred embodiment has been described in great detail above, it must be appreciated that there are various methods and mechanisms to employ the invention of the present application without departing from the spirit of the invention and as fully described in the appended claims.